



CITY OF OCEANSIDE

WATER UTILITIES DEPARTMENT

June 21, 2001

Mr. John Robertus
Executive Officer
REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
9771 Clairemont Mesa Boulevard, Suite A
San Diego, CA 92124-1324

Dear Mr. Robertus:

Subject: Request for Emergency Cleanup and Abatement Funding
Buena Vista Lagoon Nutrient Control

The purpose of this letter is to request emergency Cleanup and Abatement Funding for removing nutrients from Buena Vista Lagoon. A total of \$150,000 is requested for the removal of algae and emergent vegetation from the lagoon during summer months of calendar years 2001 through 2003.

Background. Buena Vista Lagoon lies within the Cities of Oceanside and Carlsbad. An area of 19 square miles is tributary to the 220-acre lagoon. The lagoon is part of a State Ecological Reserve owned and maintained by the State of California Department of Fish and Game (DFG). DFG has identified over 100 bird species, 18 mammal species, and 14 amphibian or reptile species within the reserve. Two least tern nesting islands were created in the eastern portion of the lagoon by DFG in 1983.

The lagoon is on the State of California 40 CFR 303(d) list for "Impaired Water Bodies". The 303(d) listing cites excessive sedimentation, nutrients, and coliform as preventing full attainment of water contact recreation, non-contact recreation, and aquatic habitat beneficial uses.

Because of excessive nutrients and sedimentation, the edges of the lagoon are dominated by emergent vegetation, including narrow and broad-leaf cattails, spiny rush, and bulrush. This vegetation, in turn, has decreased water circulation, leading to additional sedimentation and shallower water. The shallower water and decreased circulation leads to increased summertime lagoon water temperatures that, in turn, stimulates algae growth and reduces dissolved oxygen in the water column.

Residential and commercial non-point source runoff contributes nutrients to the lagoon. Sewer spills represent another key nutrient source. Sewer spills within the lagoon's 19-square-mile tributary totaled approximately 2 million gallons during 2000. A Regional Board staff report assessing the sewer spills concluded that the sewer spills likely resulted in large volumes of nutrients being deposited on the lagoon floor. The Regional Board staff report also concluded that, unless action was taken, there is a strong likelihood that during periods of increased water temperature and sunlight, the nutrients would stimulate algae blooms, depress dissolved oxygen concentrations, and potentially cause fish kills. (Regional Board Staff Report for Compliant No. 2000-74, April 2000.)

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In addition to longer days, the month of July typically brings decreased cloud cover (increased sunlight) to the coastal area. Water temperatures in excess of 70 degrees Fahrenheit are anticipated within the shallow lagoon during summer months. The combination of increased sunlight, increased water temperature, and amount of nutrients stored in the lagoon sediments is projected to exacerbate marginal water quality conditions in the lagoon during the upcoming summer months. Emergency actions are required to lessen the potential for nutrient-related adverse impacts.

Proposed Emergency Actions. To lessen the potential for algae blooms and depressing dissolved oxygen concentrations during summer months, the following emergency actions are proposed to reduce the total nutrient load within Buena Vista Lagoon:

- summertime removal of emergent vegetation, and
- summertime removal of surface algae.

Emergent vegetation and algae would be removed using a small self-powered boat equipped with a weed cutter. Cut vegetation would be collected on the surface and removed from the lagoon. Algae removal would be achieved towing or the use of hand-held fine-mesh nets. The total nutrient content (nitrogen and phosphorus) of the removed vegetation and algae would be determined by weight. Water quality monitoring would be conducted concurrent with nutrient removal activities to assess overall effects of the emergency nutrient removal actions on receiving water nutrient concentrations.

An independent contractor hired by the City would perform removal of emergent vegetation and algae. Contractor nutrient removal actions would occur under the direction of DFG and the Buena Vista Lagoon Foundation. Per instructions from DFG, algae and cattail removal activities would be timed so as to not interfere with key nesting or breeding periods. DFG and the Foundation would identify areas where emergent vegetation removal is to occur. DFG would also identify areas where contractor staging and lagoon access could occur. To prevent summertime nutrient-related impacts, it is proposed that emergency nutrient removal activities take place in the early summer months (or as directed by DFG).

Nutrient removal activities for each of the three years would be summarized in a brief annual report to be prepared by a City contractor. The report would (1) identify total manhours involved in nutrient removal activities, (2) identify the total mass of nitrogen and phosphorus removed from the lagoon, and (3) summarize the results of water quality samples collected during the nutrient removal operations.

Requested Emergency Cleanup and Abatement Funds. A total of \$150,000 in emergency Cleanup and Abatement Funds is requested to purchase equipment and fund staffing for the nutrient removal effort. Table 1 presents a breakdown of proposed activities.

As shown in Table 1, the City-hired contractor would provide land transport vehicles for the nutrient removal effort. As part of this request for emergency Cleanup and Abatement funding, a total of \$21,000 is requested for the City's purchase of the following nutrient removal equipment to be used by the contractor:

- a shallow-draft, flat-bottomed boat equipped with weed-cutter, outboard motor, and tow-trailer, and
- miscellaneous equipment including portable scale, fine-mesh algae nets, boat hook, and rakes.

Nutrient removal equipment would be donated to the Lagoon Foundation at the end of the three-year funding period.

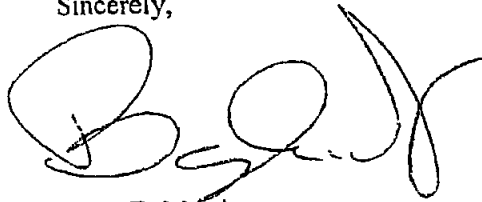
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Table I also presents a breakdown of projected staff costs for the proposed emergency nutrient removal program. As shown in the table, it is anticipated that the contractor would be engaged in nutrient removal activities over approximately a six week summer period during calendar years 2001, 2002, and 2003. During this period, total projected onsite time to be devoted to onsite nutrient removal is estimated at 1200 manhours. An additional total of 480 manhours is projected during the three-year period for algae/cattail transport and disposal. A total of 300 manhours is projected for collecting and transporting water quality samples.

Summary. In summary, the proposed emergency cleanup and abatement program would remove algae and emergent vegetation from Buena Vista Lagoon. Removing algae and emergent vegetation will decrease the amount of nutrients within the lagoon, enhance water clarity, decrease the potential and severity of algae blooms, improve water circulation, decrease the potential for dissolved oxygen depression, and decrease the potential for fish kills. These effects, in turn, would enhance designated beneficial uses of this important wetlands resource.

Please call Mr. Guss Pennell at (760) 435-5804 if you have any questions about the proposed City of Oceanside request for emergency Cleanup and Abatement funds. Thank you for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Martin', with a large, stylized flourish extending from the end.

Barry E. Martin
Water Utilities Director

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Table 1
 Breakdown of Proposed Equipment and Staffing Costs
 Emergency Nutrient Removal at Buena Vista Lagoon
 Request for Emergency Cleanup and Abatement Funds

Item	Estimated Manhours	Estimated Cost
I. Equipment and supplies		
1. Shallow-draft, flat-bottomed boat equipped with weed-cutter, outboard motor, and tow-trailer.	NA	\$20,000
2. Miscellaneous equipment including portable scale, safety jackets, fine-mesh algae nets, boat hook, and rakes.	NA	1,000
3. Utility truck (to be supplied by City contractor; truck costs estimated below are included as part of overhead of hourly personnel wages)	NA	0
II. Staffing		
1. Algae/Cattail Removal. (City-hired contractor staff time required for removal of algae and emergent vegetation. Based on two-man crew; each man working 200 hours during an approximate six week period each summer during 2001-2003. Based on hourly wage plus overhead cost of \$50 per hour. Truck and transport costs are included in the estimated overhead costs.)	1,200	60,000
2. Algae/Cattail Disposal/Transport. (Contractor staff time required for disposal/transport of removed algae and emergent vegetation. Two-man crew; each man working 80 hours during an approximate six week period during 2001-2003. Based on hourly wage plus overhead cost of \$50 per hour. Truck and transport costs are included in the estimated overhead costs.)	480	24,000
3. Monitoring. (Contractor staff time to collect and transport samples to lab and to determine nutrient mass of removed algae/cattails. Based on 100 manhours each summer during 2001-2003, at an hourly wage plus overhead cost of \$50 per hour. Truck and transport costs are included in the estimated overhead costs.)	300	15,000
4. Prepare Annual Report. (Consultant time to prepare a brief annual report identifying removed nutrient mass by month and results of water quality nutrient analyses. Based on 30 hours per year to analyze data and prepare brief annual report. Based on hourly wage plus overhead cost of \$100 per hour.)	90	9,000
III. Direct Costs		
1. Water quality monitoring (Estimated as four nutrient samples per week over a six-week period during 2001-2003 at a unit cost of \$125 direct cost per nutrient sample.)	NA	9,000
2. Solid waste disposal costs (Estimated at \$100 per truckload and 40 truckloads per season during 2001-2003.)	NA	12,000
Total Requested Emergency Cleanup and Abatement Funds	2,070	\$150,000

